Center Innovation Fund: SSC CIF

Merging Geospatial Data into a User-Friendly Application to Support Sustainable Development (LEAP)

Completed Technology Project (2012 - 2013)

Project Introduction

For this project, an economic development tool called the Local Economic Analysis Portfolio (LEAP) tool was produced. LEAP is a Geographic Information System (GIS) system which allows users to create earth-based mapping systems that describe the environmental conditions, physical infrastructure and related features for use in land/base management decisions. The primary function of this tool is to generate portfolios coupling standard descriptors about potential sites with maps and location specific information. Users can select criteria in a wizard-based tool to perform site selection analysis or draw primary and alternate sites to obtain site specific information related to the area of interest. The intention of the tool is to provide a user-friendly interface for personnel responsible for working on economic development at Stennis Space Center (SSC) and the surrounding community.

An economic development tool, for use at SSC, was developed to generate portfolios coupling standard descriptors about potential sites with maps and location specific information. The generated portfolios include pre-created maps, dynamic map products, acreages, demographic reporting of the surrounding area, areas within a specified transportation distance, distance to utilities and other critical infrastructure, soil/regolith types, and proximity to dangerous condition areas, that could potentially be used for infrastructure layout and development for decision making. The wizard-based tool allows personnel working with potential tenants to step through these descriptive areas to edit or verify the populated information before generating the portfolio. The first step involves using query tools to find property or space within a specified size constraint. Once the user has selected all the desired site information, and entered and/or verified the categorized information, the final portfolio document can be created.

Anticipated Benefits

Benefits to NASA funded missions include the fact that NASA is working to reduce the overall footprint while maximizing space utilization to save on annual operating costs. Economic development tools are applicable for use by other entities within NASA.

The benefits to NASA unfunded missions and planned missions would be similar to those that would benefit NASA. In addition to earth-based GIS systems, this technology capability has utility and/or applications for potential use for space-based locations, like the moon and Mars.

The benefits to the commercial space industry would be the same as those that would benefit NASA. The application of this type of GIS technology capability has utility and/or applications for not only here on Earth, but could be transitioned and used for space-based locations.

Screen Grab of Portfolio Wizard

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Stennis Space Center (SSC)

Responsible Program:

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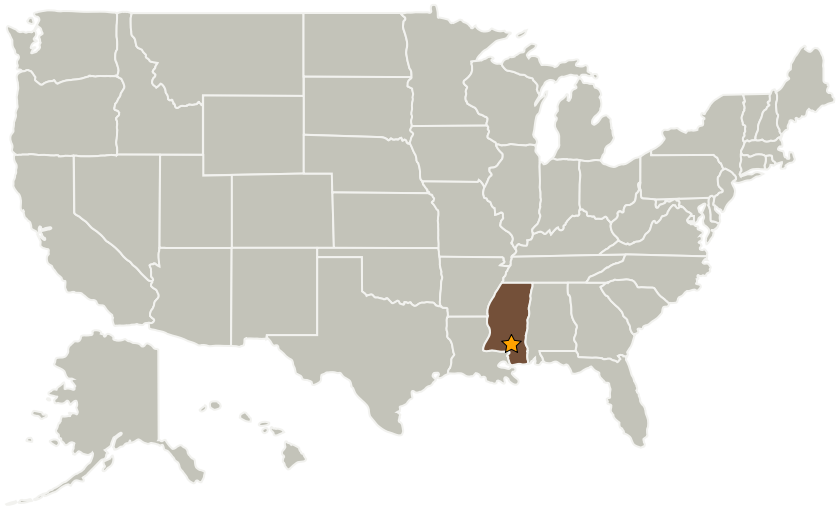
The benefits to other government agencies would be similar to those what would benefit NASA. This type of GIS technology could be used by most all government agencies to help increase accuracy, enrich operations and help meet their missions. This GIS technology has tremendous utility towards a wide variety of earth-based applications for numerous decision making processes which include, but is not limited to analysis, planning, land use, over all development.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Stennis Space Center(SSC)	Lead Organization	NASA Center	Stennis Space Center, Mississippi

Primary U.S. Work Locations
Mississippi

Project Management

Program Director:
Michael R Lapointe

Program Manager:
Ramona E Travis

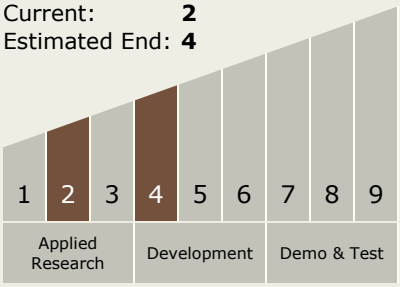
Project Manager:
Ronald G Magee

Principal Investigator:
Ronald G Magee

Co-Investigator:
Kelly A Boyd

Technology Maturity (TRL)

Start: **2**
Current: **2**
Estimated End: **4**



Technology Areas

Primary:

- TX04 Robotic Systems
  - TX04.2 Mobility
    - TX04.2.2 Above-Surface Mobility

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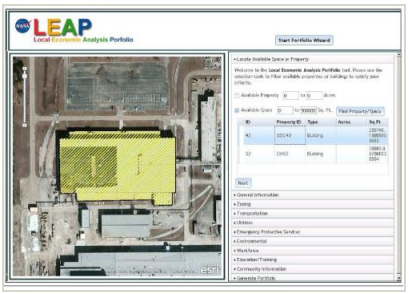
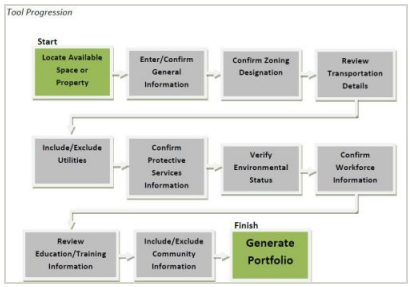
Images



Local Economic analysis Portfolio (LEAP)
Screen Grab of Portfolio Wizard
(https://techport.nasa.gov/image/3326)



Progression of the Tool Use Flow Chart
Tool Use Flow Chart
(https://techport.nasa.gov/image/3342)